

second portion wound in a second direction about a second post of the pot core. The wireless charging assembly can further include a metallic shield disposed about the wireless charging assembly.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0011]** FIG. 1 illustrates an alternative wireless charging embodiment of a stylus by a tablet computer.

**[0012]** FIG. 2 illustrates an exemplary configuration of a personal electronic device to facilitate charging of an accessory.

**[0013]** FIG. 3 illustrates an exemplary configuration of a personal electronic device to facilitate charging of an accessory.

**[0014]** FIG. 4 illustrates an exemplary wireless charging coil configuration for a personal electronic device to facilitate charging of an accessory.

**[0015]** FIGS. 5 and 6 illustrate shielding arrangements that may be employed to facilitate charging of an accessory by a personal electronic device.

**[0016]** FIG. 7 illustrates an exemplary wireless charging coil configuration configured to prevent damage to the coil assembly.

#### DETAILED DESCRIPTION

**[0017]** In the following description, for purposes of explanation, numerous specific details are set forth to provide a thorough understanding of the disclosed concepts. As part of this description, some of this disclosure's drawings represent structures and devices in block diagram form for sake of simplicity. In the interest of clarity, not all features of an actual implementation are described in this disclosure. Moreover, the language used in this disclosure has been selected for readability and instructional purposes, has not been selected to delineate or circumscribe the disclosed subject matter. Rather the appended claims are intended for such purpose.

**[0018]** Various embodiments of the disclosed concepts are illustrated by way of example and not by way of limitation in the accompanying drawings in which like references indicate similar elements. For simplicity and clarity of illustration, where appropriate, reference numerals have been repeated among the different figures to indicate corresponding or analogous elements. In addition, numerous specific details are set forth in order to provide a thorough understanding of the implementations described herein. In other instances, methods, procedures and components have not been described in detail so as not to obscure the related relevant function being described. References to "an," "one," or "another" embodiment in this disclosure are not necessarily to the same or different embodiment, and they mean at least one. A given figure may be used to illustrate the features of more than one embodiment, or more than one species of the disclosure, and not all elements in the figure may be required for a given embodiment or species. A reference number, when provided in a given drawing, refers to the same element throughout the several drawings, though it may not be repeated in every drawing. The drawings are not to scale unless otherwise indicated, and the proportions of certain parts may be exaggerated to better illustrate details and features of the present disclosure.

**[0019]** FIG. 1 illustrates an exemplary system 200 that allows a personal electronic device 201 (e.g., a tablet com-

puter such as the iPad® mobile digital device produced by Apple Inc. of Cupertino, Calif.) to charge an accessory, e.g., an active stylus 202 (which may be, for example, an Apple Pencil® computer input device). More specifically, personal electronic device 201 may include a wireless power transmitter (not shown in FIG. 1) disposed in its housing that allows personal electronic device 201 to wirelessly recharge a battery in accessory/stylus 202 when accessory/stylus 202 is brought within proximity of the wireless power transmitter. In some embodiments, personal electronic device 201 may be configured with one or more locating assemblies to provide appropriate positioning of accessory 202 with respect to device 201 such that wireless power transmitter coil(s) of device 201 are properly aligned with wireless power receiver coil(s) of accessory 202. These locating assemblies can include one or more magnets, either permanent magnets or electromagnetics, located in each of device 201 and accessory 202 and configured so that their force causes accessory 202 to be secured to device 201 in a position in which the wireless power transfer coils are aligned. Alternatively or additionally, such locating assemblies can include specially configured surfaces of device 201 or accessory 202, tabs, pins, etc.

**[0020]** In some embodiments, accessory 202 may have a thickness (diameter/vertical height in FIG. 1) that is somewhat greater than a thickness/height of device 201. Such a configuration may arise for a variety of reasons relating to the configuration, intended use, and ergonomics of the respective devices. For example, it may be desirable to reduce a thickness of device 201 so as to make it smaller, lighter, etc. Such reduced thickness may be desirable in some or all use cases of personal electronic device 201. However, in the case of accessory 202, it may be desirable to maintain a thickness at a certain level. In the case of a stylus, for example, it may be ergonomically preferable for accessory 202 to maintain a thickness that generally corresponds to the thickness of typical writing instruments. This can create a situation in which it may not be desirable to attach an accessory 202 (such as a stylus) to the side of a personal electronic device 201 (such as a tablet), because placing the combination in the charging configuration on a horizontal surface (not shown) such as a tabletop, may cause the accessory to be dislodged from the charging configuration.

**[0021]** Thus, in some embodiments, it may be preferred to have a charging configuration that places accessory 202 on a face of device 201, as illustrated in FIG. 1. This can allow the combination in the charging configuration to be set down on a horizontal surface without dislodging accessory 202 from its charging position. This, in turn, can allow device 201 to continue charging accessory 202. However, as described in greater detail below, such a configuration should preferably be designed to ensure that electromagnetic flux associated with the wireless charging operation does not interfere with operation of personal electronic device 201. Particularly, it may be desirable to provide a configuration in which the magnetic charging assembly does not interfere with a display and/or touch-sensing electronics of device 201.

**[0022]** FIG. 2 illustrates a high level schematic of a personal electronic device 300 that is configured to allow wireless charging through a face 301 of device 300. In some embodiments, device 300 may be a tablet computer. In other embodiments, device 300 may be a smartphone. In still other